

DEPARTMENT OF ENVIRONMENTAL QUALITY  
REMEDIATION DIVISION  
PETROLEUM RELEASE SECTION

## Technical Guidance Document #17

### 40 CFR 112 - Spill Prevention, Control, and Countermeasure Plans

#### **General**

The U.S. Environmental Protection Agency (EPA) requires owners or operators of bulk petroleum storage facilities to prepare and maintain a site-specific Spill Prevention, Control, and Countermeasure (SPCC) Plan for their facility. Current regulations state that if a bulk petroleum storage facility was operating prior to August 16, 2002, then the owner or operator must maintain their SPCC Plan and amend the SPCC Plan, as necessary, on or before August 17, 2005, and the owner or operator must have implemented the amended SPCC Plan no later than February 18, 2006. If a facility becomes operational after August 16, 2002, through February 18, 2006, then the owner or operator must have prepared and implemented an SPCC Plan on or before February 18, 2006. If a facility becomes operational after February 18, 2006, then the owner or operator must prepare and implement an SPCC Plan before beginning operations. A copy of the SPCC Plan must be kept at the facility if the facility is attended four or more hours per day.

This document outlines requirements, and provides guidance to owners or operators of bulk petroleum storage facilities (non-transportation-related facilities) in order to assist in the preparation of SPCC Plans. An SPCC Plan is a detailed, facility-specific, written description of how a facility's operations comply with the requirements of the Oil Pollution Prevention Regulation 40 CFR 112. These requirements include measures such as secondary containment, facility drainage, containment dikes and barriers, sump and collection systems, retention ponds, curbing, tank corrosion protection systems, and liquid level devices. This guidance document provides an overview of Plan organization, approach and methodology. Reference citations from the regulation are highlighted within this guidance document by *italic* font located between brackets (e.g., [*§ 112.3*]).

Provided as an appendix to this Technical Guidance Document, are typical recent EPA Region 8 SPCC Plan Violations that are documented on their website. DEQ-PRS has also provided as part of the appendix, EPA Region 8 Contacts and information resource links that may be helpful in preparing or updating the SPCC Plan for your facility.

#### **Requirements to Prepare an SPCC Plan**

A facility owner or operator is responsible for preparing a SPCC Plan. However, a licensed Professional Engineer (P.E.) must certify the SPCC Plan. By certifying the SPCC Plan, the P.E., having examined the facility, attests that: 1) he or she is familiar with the requirements of 40 CFR 112; 2) he, she or their agent has visited and examined the facility; 3) the Plan has been prepared in accordance with good engineering practices, including consideration of applicable industry standards, and with the requirements of 40 CFR 112; 4) procedures for required inspections and testing have been established; and, 5) the SPCC Plan is adequate for the facility.

Section 112.1 of 40 CFR states that petroleum storage facilities subject to the SPCC rule must meet three criteria: 1) the facility must be non-transportation-related; 2) the facility must have an aggregate aboveground storage capacity greater than 1,320 gallons (including all tanks, containers, and operating equipment 55 gallons or greater in capacity) or a completely buried storage capacity greater than 42,000 gallons; and, 3) there must be a reasonable expectation of a discharge into or upon navigable waters of the United States or adjoining shorelines. In general, however, an owner or operator is required to prepare a SPCC Plan for any mobile or fixed, onshore or offshore building, structure, installation, equipment, pipe, or pipeline used in oil well drilling operations, oil production, oil refining, oil storage, oil gathering, oil processing, oil transfer, oil distribution, and waste treatment, or in which oil is used.

At an installation where the three conditions exist, bulk storage containers used to store oil must be included in an installation SPCC Plan if the containers have a capacity of 55 gallons or greater. Oil is defined not only as petroleum products, such as gasoline, diesel and engine oil, but also as animal fats and vegetable oils [§ 112.2]. A bulk storage container used to store oil that has a capacity of 55 gallons or greater may not require inclusion in the installation SPCC Plan only under the following circumstances:

- The container is part of a separate facility that must have a separate SPCC Plan.
- The container is part of a separate facility that does not have to prepare an SPCC Plan (i.e., a facility that does not meet the criteria listed above).

In determining whether a spill or release at your installation could reasonably be expected to reach navigable waters, consideration must solely be based upon geographic and location aspects of the facility (such as proximity to navigable waters or adjoining shoreline, land contour, drainage, etc.). The consideration must exclude consideration of manmade features such as dikes, equipment, or other structures that might restrain, contain, or otherwise prevent a discharge from occurring. Navigable waters include:

- All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide.
- All interstate waters, including interstate wetlands.
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), wetlands, wet meadows, or natural ponds, which are navigable or are tributaries to navigable waters.
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters: 1) That are or could be used by interstate or foreign travelers for recreational or other purposes; or 2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or, 3) That are or could be used for industrial purposes by industries in interstate commerce.
- All impoundments of waters otherwise defined as waters of the United States under this section.
- Tributaries of waters identified in paragraphs (1)(i) through (1)(iv) of this definition.
- The territorial sea.
- Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6) of this definition.

The Regional Administrator may authorize an extension to the owner or operator of a facility to prepare an SPCC Plan "...when he finds that the owner or operator of a facility cannot fully comply with the requirements" as a result of either non-availability of qualified personnel, or delays in construction or

equipment delivery beyond the control and without the fault of such owner or operator or his agents or employees. The submission of a written extension request does not relieve obligation to comply with the rule, however. EPA may request a copy of the current SPCC Plan for the facility to evaluate the extension request. IF EPA authorizes an extension of time for particular equipment or other specific aspects of the SPCC Plan this does not affect your obligation to comply with the requirements related to other equipment or other specific aspects of the SPCC Plan which EPA has not expressly authorized an extension [§ 112.3(f)].

The owner or operator of a facility is required to amend the SPCC Plan for their facility "...when there is a change in the facility design, construction, operation, or maintenance that materially affects its potential for a discharge." The owner or operator of a facility is required to prepare the amendment within six months, and implement the amendment as soon as possible, but not later than six months following preparation of the amendment.

Examples: commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacement, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or revision of standard operation or maintenance procedures at a facility.

A review and evaluation of the SPCC Plan for a facility is required at least once every five years from the date facility becomes subject; or if the facility was in operation on or before August 16, 2002, five years from the date of the last review of the facility SPCC Plan. A licensed P.E. must certify any technical amendments to the SPCC Plan. The owner or operator must document the review and evaluation of the SPCC Plan. The owner or operator must sign a statement as to whether the owner or operator will amend the SPCC Plan: at beginning or end of SPCC Plan; in a log; or an appendix to the SPCC Plan [§ 112.5].

Example: "I have completed review and evaluation of the SPCC Plan for (facility name) on (date), and will (will not) amend the SPCC Plan as a result."

No matter who prepares your SPCC Plan, you as the owner or operator, are ultimately responsible for complying with the rule. Certain elements must be included in the SPCC Plan for the SPCC Plan to comply with the provision of 40 CFR 112. The three areas that should be addressed in the SPCC Plan at a minimum are: **1) operating procedures the facility implements to prevent oil spills; 2) control measures installed to prevent oil from entering navigable waters or adjoining shorelines; and, 3) countermeasures to contain, cleanup, and mitigate the effects of an oil spill that has an impact on navigable waters or adjoining shorelines.**

The SPCC Plan must follow the sequence of 40 CFR 112.7 or provide cross-references to the requirements of 40 CFR 112.7. The SPCC Plan must have full approval of management, with the authority to commit the necessary resources. The SPCC Plan should discuss additional facilities or procedures, methods, or equipment not yet fully operational; discussed in separate paragraphs, the details of installation and operational start-up. The SPCC Plan must also include a complete discussion of the facility's conformance with the applicable requirements of Part 112 and must comply with all applicable requirements. The SPCC Plan may deviate from certain requirements if equivalent environmental protection by some other means of spill prevention, control, or countermeasure is provided, and the reasons for nonconformance and the alternate methods to be used are described in detail in the SPCC Plan, as well as how they will achieve equivalent environmental protection [§ 112.7(a)].

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## **SPCC Plan Preparation**

Organize the SPCC Plan describing procedures the facility will use when a discharge occurs in a way that will make them readily usable in an emergency, and include appropriate supporting material as appendices to the SPCC Plan. Include in your SPCC Plan a complete discussion of the facility's conformance with the applicable requirements and other effective discharge prevention and containment procedures listed in Part 112 or any applicable more stringent State rules, regulations, and guidelines [§ 112.7(a)(1)]. Comply with all applicable requirements of Part 112. The SPCC Plan may deviate from (g) and (h)(2), (3) or (i) if equivalent environmental protection by some other means of spill prevention, control, or countermeasure is provided, and the reasons for nonconformance and the alternate methods to be used are described in detail in the SPCC Plan, as well as how the facility will achieve equivalent environmental protection [§ 112.7(a)(2)].

1. The location and type of oil (and name, if appropriate) of each container, and the location of any completely buried storage tanks that are otherwise exempted from the SPCC regulation must be depicted on a facility diagram or set of diagram, along with all associated transfer stations and piping [§ 112.7(a)(3)]. In addition, areas where mobile or portable (i.e., not "fixed") containers are stored need to be included on the facility diagram or set of diagrams

Additional required information specific to each container that must be included in the SPCC Plan, but need not be placed directly on the facility diagram includes:

- The container's storage capacity [§ 112.7(a)(3)(i)].
- Discharge prevention measures for routine handling of products (loading/unloading, and facility transfers, etc.) [§ 112.7(a)(3)(ii)].
- Discharge drainage control (i.e., secondary containment) around the AST [§ 112.7(a)(3)(iii)].
- Other structures, equipment, and procedures for control of a discharge; and, response, and countermeasures for discharge discovery, response and cleanup - both the facility's capability and those that might be required of a contractor [§ 112.7(a)(3)(iv)].
- Methods of disposal of recovered materials in accordance with applicable legal requirements [§ 112.7(a)(3)(v)].
- A contact list and phone numbers for [§ 112.7(a)(3)(vi)]:
  - Response coordinator for the facility;
  - National Response Center;
  - Cleanup contractors with whom the facility has an agreement for response; and,
  - All appropriate Federal, State, and local agencies.
- Information and procedures to enable a person reporting a discharge to relate information on [§ 112.7(a)(3)]:
  - The exact address or location and phone number of the facility;
  - The date and time of the discharge;
  - The type of material discharged;
  - Estimates of the total quantity discharged;
  - Estimates of the quantity discharged that may be harmful;
  - The source of the discharge;
  - A description of all affected media;

- The cause of the discharge;
- Any damages or injuries caused by the discharge;
- Actions being used to stop, remove, and mitigate the effects of the discharge;
- Whether an evacuation may be needed; and,
- The names of individuals and/or organizations that have also been contacted.

Site-specific drawings are not explicitly required in Part 112. A detailed facility diagram may be completely adequate for the Plan. A sample site-specific drawing is included as Attachment A.

Site or individual container photographs are not required in Part 112. However, photographs may assist the reader in rapid recognition of the site layout, and can illustrate a visual history of the physical condition of the facility and/or the containers located thereon.

2. The direction, rate of flow, and total quantity of oil that could be discharged from the facility as a result of each type of major equipment failure must be predicted where experience indicates a reasonable potential for equipment failure. Major equipment failure may include loading/unloading equipment, or tank rupture, overflow or leakage [*§ 112.7(b)*].

If site-specific drawings are included with the SPCC Plan, illustrate the predicted discharge direction(s) on the drawing. If a detailed facility drawing is used in place of site-specific drawings, illustrate the discharge direction(s) on the drawing.

You must still, however, discuss the rate of flow and the quantity of oil that could be discharged as a result of the different types of equipment failure. If you do not use site-specific sections in the SPCC Plan, discuss the discharge direction, rate of flow, and total quantity predictions throughout the facility (e.g., include tables listing these attributes of each storage container).

3. Bulk storage containers that have a capacity of 55 gallons or greater and have a reasonable potential to discharge oil to navigable waters must have some form of containment and/or diversionary structures that would prevent a discharge from reaching the navigable waters. At a minimum, one of the following discharge prevention systems must be used [*§ 112.7(c)*]:
  - Dikes, berms, or retaining walls sufficiently impervious to contain oil.
  - Curbing.
  - Culverting, gutters, or other drainage systems.
  - Weirs, booms, or other barriers.
  - Spill diversion ponds.
  - Retention ponds.
  - Sorbent materials.

The entire containment system, including walls and floor, must be capable of containing oil and must be constructed so that any discharge from a primary containment system, such as a tank or pipe, will not escape the containment system before cleanup occurs. Bulk storage container facilities must provide secondary containment for the largest single container plus sufficient freeboard to contain precipitation, nominally 110%.

In special cases, installation of secondary containment structures or pieces of equipment may be determined to be not practicable. In such instances, a clear explanation must be provided in the SPCC Plan. The reason for nonconformance must be justified, and alternate methods of 'equivalent environmental protection' must be provided [§ 112.7(d)]. **Costs and economic impacts do not justify why a facility cannot satisfy the secondary containment requirement.** Justifiable reasons why secondary containment may be considered not practicable include:

- Space or other geographic limitations of the facility.
  - Local zoning ordinances, fire prevention standards, or safety considerations.
  - Installation would defeat the overall goal of 40 CFR 112 to prevent discharges.
4. If you, as the owner or operator of the facility, determine that the installation of the structures or pieces of equipment listed as acceptable means for providing secondary containment for storage containers and facility tank car and tank truck loading/unloading areas to prevent a discharge as described in § 112.1(b) are not practicable, you must explain in the Plan why such measures are not practicable [§ 112.7(d)].
    - For bulk storage containers: conduct both periodic integrity and leak testing of the valves and piping.
    - Provide an oil spill contingency plan per 40 CFR 109.
    - Provide a written commitment of manpower, equipment, and materials to control and remove any harmful quantity of oil discharged.
  5. You, as the owner or operator of the facility must conduct regular facility inspections and tests in accordance with written procedures developed in the SPCC Plan, or by the licensed P.E. who certified the facility Plan. Keep these written procedures and a record of the inspections and tests, signed by the appropriate supervisor or inspector, with the SPCC Plan for a period of three years. Records of inspections and tests kept under usual and customary business practices will suffice for purposes of this requirement practicable [§ 112.7(e)].
  6. Document, and designate a person at the facility accountable for discharge prevention. Schedule and conduct discharge prevention briefings for facility oil-handling personnel at least once a year. Train facility oil-handling personnel in [§ 112.7(f)]:
    - The operation and maintenance of equipment.
    - Response procedures.
    - Applicable pollution control laws, rules, and regulations.
    - General facility operations.
    - Contents of the facility SPCC Plan.
  7. Document in the SPCC Plan appropriate security measures, and implement the documented measures. These may include [§ 112.7(g)]:
    - Fully fence and lock entrance gates - equivalent environmental protection: fence all areas directly involved in the handling, processing and storage of oil.
    - Ensure that the master flow and drain valves permitting direct outward flow of the container's contents to the surface have adequate security measures.
    - Lock starter controls and locate in an area accessible only to authorized personnel.
    - Securely cap or blank-flange loading/unloading connections of oil pipelines or facility piping when not in service or when in standby service for an extended time. This security practice also applies to piping that is emptied of liquid content either by draining or by inert gas pressure.

- Provide facility lighting commensurate with the type and location of the facility that will assist in the:
  - The discovery of discharges occurring during hours of darkness, both by operating personnel, if present, and by non-operating personnel (the general public, local police, etc.); and,
  - Prevention of discharges occurring through acts of vandalism.
- 8. Facility tank car/truck loading/unloading racks must be equipped with a drainage system into a catch basin or treatment facility designed to handle discharges, or a quick drainage system designed to hold at least the maximum capacity of the largest single compartment of a tank car or tank truck loaded or unloaded at the facility. Interlocked warning light or physical barrier system, warning signs, wheel chocks, or vehicle brake interlock systems must be used to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines [*§ 112.7(h)*].
- 9. Field constructed containers that may be subject to brittle fracture must be evaluated for risk of discharge or catastrophic failure, in order to help prevent future failure [*§ 112.7(i)*].
  - If a field-constructed aboveground container undergoes a repair, alteration, reconstruction, or a change in service that might affect the risk of a discharge or failure due to brittle fracture or other catastrophe, or has discharged oil or failed due to brittle fracture failure or other catastrophe, evaluate the container for risk of discharge or failure due to brittle fracture or other catastrophe, and as necessary, take appropriate action.

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## APPENDIX

### **Typical Recent EPA Region 8 SPCC Plan Violations**

Failure to prepare and implement a facility SPCC Plan in accordance with 40 CFR § 112.7.

Secondary containment not adequately addressed in the SPCC Plan violation of 40 CFR § 112.7(c) [now 112.7(c) and 112.8(c)(2)].

The SPCC Plan did not discuss any warning/barrier system to prevent vehicles from leaving the loading/unloading rack before disconnecting the transfer lines in violation of 40 CFR § 112.7(e)(4)(iii).

The SPCC Plan did not have a signature of approval by Management as required by 40 CFR § 112.7.

The SPCC Plan was not certified by a professional engineer as required by 40 CFR § 112.3(d).

The SPCC Plan did not adequately address the prompt correction of oil leaks in violation of 40 CFR § 112.7(e)(2)(x).

Mobile/portable oil storage tanks were not addressed in the SPCC Plan in violation of 40 CFR § 112.7(e)(2)(xi).

The SPCC Plan did not discuss adequacy of design of pipe supports as required by 40 CFR § 112.7(e)(3)(iii).

Warning vehicle operators of exposed pipes was not addressed in the SPCC Plan in violation of 40 CFR § 112.7(e)(3)(v).

Examination of the bottoms drains of vehicles for leaks prior to filling and departures were not mentioned in the SPCC Plan in violation of 40 CFR § 112.7(e)(4)(iv).

Facility security measures including fencing, gates, and/or security guards were not mentioned in the SPCC Plan in violation of 40 CFR § 112.7(e)(9)(i).

Master drain valves on oil storage tanks are not locked position in violation of 40 CFR § 112.7(e)(9)(ii).

Securing out-of-service pipes by blanking, capping, or blind-flanging was not addressed in the SPCC Plan in violation of 40 CFR § 112.7(e)(9)(iv).

Facility lighting was not addressed in the SPCC Plan in violation of 40 CFR § 112.7(e)(9)(v).



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**Information Resource Links**

<http://www.epa.gov/oilspill/>

EPA Oil Spill Program Information Line at (800) 424-9346.